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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS WIRYCZ, PER EDLUND, and
KRISTER DRAXO

Appeal 2008-4916
Application 09/996,454
Technology Center 1700

Decided: January 2, 2009

Before CHUNG K. PAK, CHARLES F. WARREN, and
THOMAS A. WALTZ, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 through 3, 5 through 20, and 24 through 26, all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6.

We AFFIRM.

STATEMENT OF THE CASE

The subject matter on appeal is directed to a process of manufacturing a fiberglass wall covering. (Spec. 4). Further details of the appealed subject matter are recited in claims 1, 24, and 25, which are reproduced below:

1. A process of manufacturing a designed fiberglass wall covering comprising;

(a) providing a fiberglass fabric;

(b) impregnating the glass fabric by applying a chemical dispersion to the glass fabric wherein said chemical dispersion is provided as a water based dispersion comprising starch and a polymeric binder;

(c) drying the treated glass fabric;

(d) subsequently forming a first image coating on one side of said treated glass fiber fabric by selectively applying a hydrophobic primary image coating to a portion of the treated glass fabric;

(e) subsequently forming a second image coating on said first image coating by selectively applying the coating to a portion of the treated glass fabric, said coating applied from a chemical mixture consisting essentially of a polymeric binder and expandable chemicals, with said second coating being capable of creating distinct image pattern upon heating; and

(f) heating the glass fabric to expand the expandable chemicals and thereby create a three-dimensional image pattern.

24. A process of manufacturing a designed glass fiber wall covering comprising:

(a) applying a chemical dispersion comprising a starch, a polymeric binder and optionally a pigment and/or a cross-linking agent to a glass fiber fabric;

(b) subsequently applying to selected areas on one side of the treated fabric of step (a) above, a first image layer comprising a hydrophobic coating selected from a hydrophobic binder or varnish;

(c) subsequently applying a second image coating to selected areas of the first image layer applied in step (b) above, said second image coating consisting essentially of a polymeric binder and expandable microspheres; and

(d) subjecting the coated glass fiber fabric obtained in step (c) above to an elevated temperature to expand the microspheres and create a three-dimensional image pattern.

25. The process according to claim 24, wherein the second image coating consists essentially of 20% to 80% of a polymeric latex binder and 5% to 40% of expandable microspheres, the percentages based on the dry weight of the coating.

As evidence of unpatentability of the claimed subject matter, the Examiner relies upon the following references:

Schwartz	4,433,022	Feb. 21, 1984
Melber	4,902,722	Feb. 20, 1990
Edlund	6,291,011 B1	Sep. 18, 2001

The Examiner rejects the claims on appeal as follows:

- 1) Claims 1-3, 5-20, and 24-26 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Edlund and Melber; and
- 2) Claims 1-3, 5-20, and 24-26 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Edlund and Schwartz.

Appellants appeal from the Examiner's decision rejecting the claims on appeal under § 103(a).

ISSUES

With respect to claims 1 and 24 in rejection (1), Appellants do not dispute the Examiner's finding that Edlund teaches steps (a) through (d) recited in claim 1 and steps (a) and (b) recited in claim 24. (FF 1). Nor do Appellants dispute the Examiner's finding that Melber teaches heating a syntactic foamable print medium on a fiberglass fabric to expand expandable microspheres containing expandable chemicals to create a distinct three-dimensional image pattern. (FF 3). Instead, Appellants argue that there is "no disclosure in the cited [prior] art [references] which would have motivated those of ordinary skill in the art to modify the process of Edlund to include the step of Melber." (App. Br. 6). Appellants also argue that Melber does not teach the claimed second image coating "consisting essentially of a polymeric binder and expandable chemicals" as recited in claim 1 or "consist[s] essentially of a polymeric binder and expandable microspheres" as recited in claim 24. (App. Br. 8).

Thus, the issue is: Have Appellants shown reversible error in the Examiner's determination that one having ordinary skill in the art would have been led to apply and heat the claimed second image coating consisting essentially of a polymeric binder and expandable chemicals on top of Edlund's treated fiber glass wall covering having an image (first hydrophobic image coating) to create a three-dimensional image pattern in the manner recited in claims 1 and 24 within the meaning of § 103?

With respect to claim 25 in rejection (1), Appellants do not dispute the Examiner's finding that Melber's thermosetting acrylic latex corresponds to the claimed polymeric latex binder. (FF 4). Instead, Appellants argue that

“no polymeric binders are present in the expandable formulations of . . . Melber, let alone in the amount set forth in claim 25.” (App. Br. 9).

Thus, the issue is: Have Appellants shown reversible error in the Examiner’s determination that Melber teaches or would have suggested 20% to 80% of a polymeric binder and 5% to 40% of expandable microspheres based on a dry weight of the coating as required by claim 25 within the meaning of § 103?

With respect to rejection (2), Appellants do not dispute the Examiner’s finding that Edlund teaches steps (a) through (d) recited in claim 1 and steps (a) and (b) recited in claim 24. (FF 1). Nor do Appellants dispute the Examiner’s finding that Schwartz teaches heating fiberglass coated with an expandable print paste, which comprises expandable microspheres filled with, *inter alia*, expandable chemicals, to create a three-dimensional image pattern. (FF 12). Appellants argue that “there is no disclosure in the cited art which would have motivated those of ordinary skill in the art to modify the process of Edlund to include the step of Schwartz.” (App. Br. 1).

Thus, the issue is: Have Appellants shown reversible error in the Examiner’s determination that one having ordinary skill in the art would have been led to apply and heat the claimed second image coating consisting essentially of a polymeric binder and expandable chemicals on top of Edlund’s treated fiber glass wall covering having an image (first hydrophobic image coating) to create a three-dimensional image pattern in the manner recited in claims 1 and 24 within the meaning of § 103?

FINDINGS OF FACT (FF)

1. Appellants do not dispute the Examiner's finding that Edlund teaches steps (a) through (d) recited in claim 1 and steps (a) and (b) recited in claim 24. (*Compare* Ans. 3-5 with App. Br. 3-14 and Reply Br. 1-2; *see* Edlund, col. 1, ll. 20-21, col. 2, ll. 9-26, and col. 3, ll. 50-67). In this regard, Edlund at col. 2, ll. 23-36 and col. 3, ll. 50-67 teaches a method of manufacturing a designed fiberglass wall covering comprising forming an image pattern (first image coating) on one side of a treated fiberglass fabric via selectively applying a hydrophobic varnish with or without color pigments (hydrophobic image coating).
2. Edlund at col. 2, ll. 9-14 states that "[i]t is much desired in the art to provide a feasible and economic process to produce an intermediate rolled good product, which when applied to a wall and painted by a consumer, will display a distinct and decorative image effect."
3. Appellants do not dispute the Examiner's finding that Melber teaches applying and heating a syntactic foamable print medium on a fiberglass fabric to expand expandable microspheres containing expandable chemicals to create a distinct three-dimensional image pattern. (*Compare* Ans. 3-4 and 5-8 with App. Br. 3-14 and Reply Br. 1-2; *see* Melber, cols. 1-8).
4. Appellants do not dispute the Examiner's finding that Melber's thermosetting acrylic latex binder corresponds to the claimed polymeric latex binder. (*Compare* Ans. 3 and 7 with App. Br. 3-9

and Reply Br. 1-2; *see* Melber, col. 3, ll. 9-44 and col. 9, ll. 3-16 and Spec. 11).

5. Melber at col. 1, ll. 20-21 and col. 7, ll. 30-36 teaches using a syntactic foamable print medium corresponding to the claimed second image coating to print two and three-dimensional graphic designs in order to form “a permanent, good quality graphic representation or decorative pattern” having good reproducibility.
6. Melber at col. 2, ll. 38-41 and col. 7, ll. 15-30 teaches that the syntactic foamable print medium may be printed on “any known substrate” including wall coverings and fiberglass fabrics.
7. Melber at col. 3, ll. 57-65 teaches that the pre-expanded microspheres in its syntactic foamable print medium are formed from expandable microspheres having blowing agents encapsulated therein. Melber at col. 5, ll. 1-29 also teaches heating the expandable microspheres after their application on a substrate in an air oven to expand the microspheres.
8. Melber at col. 6, ll. 35-44 states that:

The foamed graphic media formulated in accordance with the present invention may be applied to a substrate by any of the known and conventional techniques appropriate thereto . . . All these techniques share in common the selective application of a graphic medium to a substrate, and all techniques are contemplated herein.
9. Melber at col. 7. l. 45 to 8, l. 26 states that:

TABLE I				
CONVENTIONAL PIGMENT PRINT			SYNTACTIC FOAM PIGMENT PRINT	
	%	Lbs. (1-Gal)		Lbs. (1-Gal)
Water	78	6.63	57.3	2.863
Thickener	1	.17	.8	.040
Binder	10	.85	22.4	1.120
Microspheres			2.5	.125
Pigment	10	.85	17.0	.85
TOTAL	100	9.50	100	5.09
Lbs. Non-Volatile			1.292	1.557
Lbs. Water			7.208	3.443
% Non-Volatile (Weight)			13.2%	31.1%
% Non-Volatile (Volume)			13.5%	58.7%

....

It is also within the scope of the present invention to substitute a minor amount of pre-expanded microspheres for a portion of the expandable microspheres present within foamable formulations used to produce a raised or three-dimensional graphic effect on paper or textile substrates. One such formulation is commercially available under the name FOAMCOAT. The partial substitution of pre-expanded spheres renders such formulations more economical to produce. One of the potential benefits exhibited by such a system is the ability to print, dry, expand[,] and cure the foam on a rotary screen press at increased line speeds.

The ratio of pre-expanded microspheres to expandable microspheres may, of course, vary within wide limits depending upon end use, method of application, etc. However, with a combination of 1 percent pre-expanded with 16 percent expandable microspheres, the mileage obtained is substantially better than that obtained with FOAMCOAT not enhanced with pre-expanded spheres. In general, it is anticipated that the range of pre-expanded spheres to be added to the FOAMCOAT should be in the range of about 0.1 percent up to about 5 percent.

10. Appellants have not shown that any of Melber's additional, unclaimed ingredients (i.e., a pigment, a thickener, water, or pre-expanded microspheres) detrimentally affect the formation of a three

dimensional pattern. In fact, there is nothing in the record, which indicates that Melber's additional ingredients are detrimental to the formation of a three-dimensional decorative pattern or adversely affect the expansion of expandable microspheres upon heating.

11. The Specification at pages 4 and 10 states that claimed second image coating is used to produce a three-dimensional decorative pattern via expanding its microspheres.

12. Appellants do not dispute the Examiner's finding that Schwartz teaches heating fiberglass coated with an expandable print paste, which comprises expandable microspheres filled with, *inter alia*, expandable chemicals, to create a three-dimensional image pattern. (*Compare* Ans. 4-5 and 10 *with* App. Br. 3-14 and Reply Br. 1-2; *see* Schwartz, cols. 1-6).

13. Schwartz teaches selectively forming a three dimensional decorative architectural pattern (second image coating) on a fiberglass wall covering to obtain "various effects . . . both visually and spacially" by printing an expandable print paste comprising a polymeric binder and expandable microspheres containing expandable chemicals; and subsequently heating the fiberglass wall covering coated with the expandable print paste in order to expand the expandable microspheres to create a three-dimensional decorative architectural pattern. (Schwartz, cols. 1-7).

PRINCIPLES OF LAW

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations, if any. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim would have been obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007).

"[T]he phrase 'consisting essentially of' limits the scope of a claim to the specified ingredients and those that do not materially affect the basic and novel characteristic(s) of a composition." *In re Herz*, 537 F.2d 549, 551-52 (CCPA 1976)(emphasis omitted)(citing *In re Janakirama-Rao*, 317 F.2d 951 (CCPA 1963)).

It is well settled that Appellants have the burden of showing that the additional ingredients taught by the prior art references affect the basic and novel characteristic of a claimed chemical mixture and/or second image coating. *In re De Lajarte*, 337 F.2d 870, 874 (CCPA 1964).

A specific example of in the prior art reference that is within the claimed range reads on that claimed range. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782 (Fed. Cir. 1985).

ANALYSES

*Rejection (1): The 103(a) rejection over the combined disclosures of Edlund
and Melber¹*

Claims 1 and 24

As stated above, Edlund teaches a method of manufacturing a designed fiberglass wall covering comprising forming an image (first image coating) on one side of a treated fiberglass fabric via selectively applying a hydrophobic varnish with or without color pigments (hydrophobic image coating). (FF 1). Although Edlund teaches (FF 2) that its treated fiberglass wall covering (having a hydrophobic image coating) may be painted to provide an additional decorative image, Edlund does not mention forming a three-dimensional image pattern by applying and heating a second image coating consisting essentially of a polymeric binder and expandable chemicals to its treated fiberglass fabric as required by claims 1 and 24.

Melber teaches selectively printing a three dimensional decorative pattern on “any known substrate” including wall coverings and fiberglass fabrics (inclusive of Edlund’s treated fiberglass fabric wall covering) via applying and heating a syntactic foamable print medium corresponding to the claimed second image coating comprising a pigment, a polymeric binder, a thickener, water, pre-expanded microspheres, and expandable microspheres containing expandable chemicals on the fiberglass wall covering substrate to expand the microspheres containing the expandable chemicals and create a three-dimensional decorative (image) pattern. (FF 5-

¹ Appellants’ arguments for patentability are based solely on the limitations of claims 1, 24, and 25. Therefore, we select claims 1, 24, and 25 as the representative claims consistent with 37 C.F.R. § 41.37(c)(1)(vii).

9). Melber teaches that its syntactic foamable print medium corresponding to the claimed second image coating can be selectively applied to any wall covering substrate, inclusive of Edlund's treated fiber glass wall covering, to form "a permanent, good quality graphic representation or decorative pattern" having good reproducibility. (FF 5-6).

Given the advantage of forming a permanent, reproducible good quality decorative image upon using Melber's selective printing technique, one having ordinary skill in the art would have been led to use Melber's syntactic foamable print medium corresponding to the claimed second image coating on top of Edlund's treated fiberglass wall covering (having a first hydrophobic image coating) to create a three-dimensional decorative image pattern in the manner required by claims 1 and 24 within the meaning of § 103. This is especially true in this case since Edlund's treated fiberglass wall covering is an intermediate rolled good product for applying additional decorative images. (FF 2).

Accordingly, we determine that it would have been obvious to one of ordinary skill in the art to apply the claimed second image coating on top of Edlund's treated fiberglass wall covering (having a first hydrophobic image coating) and heating the resulting fiberglass fabric to create a three-dimensional decorative pattern with a reasonable expectation of successfully enhancing the appearance and reproducibility of Edlund's fiberglass wall covering.

In reaching this determination, we have considered Appellants' argument that "claims 1 and 24, which recite 'consisting essentially of' a polymeric binder and expandable chemicals or microspheres, exclude the

presence of pre-expanded microspheres in the second image coating, as pre-expanded microspheres would materially affect the basic and novel characteristics of the presently claimed processes of manufacturing a designed glass fiber wall covering.” (App. Br. 8). According to the Specification, the claimed second image coating is used to produce a three-dimensional decorative pattern via expanding its microspheres. (FF 11). Thus, any additional ingredients not recited in claims 1 and 24 that do not materially affect such basic and novel function (property) cannot be said to be precluded by the language “consisting essentially of.” However, Appellants have not shown that Melber’s additional ingredients (i.e., a pigment, a thickener, water, and pre-expanded microspheres) materially affect such basic and novel characteristics of the claimed second image coating. (FF 10). In fact, there is nothing in the record, which indicates that Melber’s additional ingredients are detrimental to the formation of a three-dimensional decorative pattern or adversely affect the expansion of expandable microspheres upon heating (FF 10).

Accordingly, based on the factual findings set forth in the Answer and above, we affirm the Examiner's decision rejecting claims 1-3, 5-20, 24, and 26 under 35 U.S.C. § 103(a).

Claim 25

As stated above, Melber teaches a syntactic foamable print medium having a pigment, a thermosetting acrylic latex binder, pre-expanded microspheres, and expandable microspheres. Appellants do not dispute the

Examiner's finding that Melber's thermosetting acrylic latex binder corresponds to the claimed polymeric latex binder. (FF 4).

Melber teaches that the syntactic foamable print medium comprises 22.4% binder and 2.5% microspheres based on a wet weight, which corresponds to 52.4% of a binder and 5.8% microspheres based on a dry weight (in the absence of water). (FF 9). These microspheres comprise pre-expanded microspheres and expandable microspheres in a ratio of 1 to 16, which corresponds to 6.25% pre-expanded microspheres and 93.75% expandable microspheres. *Id.* In other words, Melber teaches a foamable print medium comprising 52.4% of a binder and 5.43% of expandable microspheres (calculated by multiplying 5.8 microspheres with 0.9375 expandable microspheres/microsphere) based on the dry weight, which read on the claimed ranges of 20% to 80% of a polymeric latex binder and 5% to 40% of expandable microspheres based on dry weight.

Therefore, we determine that it would have been obvious to one of ordinary skill in the art to employ a second image coating having a polymeric binder and expandable microspheres in the claimed ranges within the meaning of § 103(a).

Appellants also repeat the same arguments directed to independent claims 1 and 24 in connection with claim 25. (App. Br. 9). These arguments are not convincing for the reasons set forth above.

Thus, based on the same Factual Findings and conclusions set forth above, we concur with the Examiner that Edlund and Melber would have rendered the subject matter recited in claim 25 obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103(a).

Accordingly, based on the factual findings set forth in the Answer and above, we affirm the Examiner's decision rejecting claim 25 under 35 U.S.C. § 103(a).

Rejection (2): The 103(a) rejection over the combined disclosures of Edlund and Schwartz²

As stated above, Edlund teaches a method of manufacturing a designed fiberglass wall covering comprising forming an image (first image coating) on one side of a treated fiberglass fabric via selectively applying a hydrophobic varnish with or without color pigments (hydrophobic image coating). (FF 1). Although Edlund teaches (FF 2) that its treated fiberglass wall covering (having a hydrophobic image coating) may be painted to provide an additional decorative image, Edlund does not mention forming a three-dimensional image pattern by applying and heating a second image coating consisting essentially of a polymeric binder and expandable chemicals to its treated fiberglass fabric as required by claims 1 and 24.

Schwartz teaches selectively forming a three dimensional decorative architectural image pattern on a fiberglass wall covering to obtain “various effects . . . both visually and spacially” by printing an expandable print paste corresponding to the claimed second image coating comprising a polymeric binder and expandable microspheres containing expandable chemicals; and subsequently heating the fiberglass wall covering coated with the

² Appellants’ arguments for patentability are based solely on the limitations of claims 1 and 24. Therefore, we select claims 1 and 24 as the representative claim consistent with 37 C.F.R. § 41.37(c)(1)(vii).

expandable print paste in order to expand the expandable microspheres to create a three-dimensional decorative architectural image pattern. (FF 12-13).

Given the advantage of obtaining various visual and spacial effects on a fiberglass wall covering via Schwartz's selective printing technique, one having ordinary skill in the art would have been led to use Schwartz's expandable print paste corresponding to the claimed second image coating on top of Edlund's treated fiberglass wall covering (having a first hydrophobic image coating) to create a three-dimensional architectural image pattern in the manner required by claims 1 and 24 within the meaning of § 103. This is especially true in this case since Edlund's treated fiberglass wall covering is said to be an intermediate rolled good product for applying additional decorative images (FF 2).

Accordingly, we determine that it would have been obvious to one of ordinary skill in the art to apply the claimed second image coating on top of Edlund's treated fiberglass wall covering (having a first hydrophobic image coating) and heating the resulting fiberglass fabric to create a three-dimensional decorative image pattern with a reasonable expectation of successfully enhancing the appearance or visual and spacial effects of Edlund's fiberglass wall covering.

Accordingly, based on the factual findings set forth in the Answer and above, we affirm the Examiner's decision rejecting claims 1-3, 5-20, and 24-26 under 35 U.S.C. § 103(a).

ORDER

The decision of the Examiner is affirmed.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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